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ABSTRACT

This research was concerned with teacher routines and with the ordinary things that experienced teachers do spontaneously in their classrooms in order to determine what these teachers do well, how they do the things they do well, and how they conceptualize their own classroom teaching. In deciding which teachers would comprise the research sample, pupils were invited to describe the strengths of their recent teachers. Pupil perceptions of exemplary teacher characteristics and a consensus of teachers identified as effective resulted in the selection of teachers with different strengths and different subject specialties from secondary school and feeder primaries. These teachers selected the aspects of their teaching which particularly pleased or satisfied them. It was noted that they initially referred to their pupils' activities or progress in pointing out elements what they consider successful teaching. An analysis of of data gathered from observation and taped reflections highlights variations among the teachers as well as generalizations on the many similarities on how the teachers evaluated their own teaching. A set of inter-connected concepts developed from intensive studies of teachers' interviews and responses to questions led to a theoretical framework of how exemplary teachers form standardized patterns of action or routines in order to maintain particular desired states in pupil activity or to promote specific kinds of progress. (JD)

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THE KNOWLEDGE WHICH UNDERPINS THE CRAFT OF TEACHING

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THE KNOWLEDGE WHICH UNDERPINS THE CRAFT OF TEACHING

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THE RESEARCH AIMS AND APPROACH

This research is concerned with the ordinary things which experienced teachers do spontaneously in their classrooms. We are interested in understanding what these teachers do well, how they do the things they do well, and how they conceptualise their own classroom teaching. One reason for our current lack of knowledge in this area is that teachers rarely talk in detail about what is an habitual and largely automatic pattern of activity. Many see it as so ordinary and obvious that it merits little comment. But what is familiar and straightforward to them can be a source of stress to a beginning teacher.

In the long term, therefore, our aim is to facilitate students' understanding of how experienced teachers go about their classroom activity, and of the practical knowledge which underpins that activity. In the meantime, we are engaged in fundamental research which seeks to explore that part of teachers' professional knowledge which is acquired primarily through their practical experience, is brought to bear spontaneously and routinely on their teaching, and so guides their day-to-day actions in classrooms. We refer to this as their professional craft knowledge. The research has drawn extensively on the ideas of Deforges and McNamara (Deforges and McNamara, 1977 and 1979; McNamara and Deforges, 1978). We are interested in routines which teachers may make use of in classrooms, but what is to count as a routine must emerge from the ways in which teachers construe their own teaching.

Our approach is a version of case-study research and is not evaluative (we aim to uncover the characteristics of professional craft knowledge so we cannot start by claiming we know what it ought to be like). Furthermore, we cannot plan in terms of any theoretical model of teaching (eg process-product, enquiry-oriented or mastery learning) or of teachers (eg as classroom manager, decision maker, information processor, dilemma resolver or rational curriculum planner); this would imply we already knew what teachers' actions were directed towards, or how they thought about their teaching, but that is what the research is designed to investigate. Nor can we adopt the strategies of classroom action-research which investigate problems identified by the actor-researcher and emphasise the role of the teacher as a researcher. Our concern is with the teacher as a teacher and with illuminating the existing strengths of the teaching.

Our major concern, therefore, is with aspects of 'good teaching'. But who decides what counts as 'good teaching'? Our basic premise precluded us from making that judgement; instead it was left to those inside the classroom: the teachers and the pupils.

SELECTION OF A SAMPLE: THE ROLE OF PUPILS

In deciding which teachers we would ask to work with us, we invited pupils to describe the strengths of their recent teachers; we looked for consensus both in their nomination of particular teachers and about the strengths of those teachers. Our other criteria for the selection sought teachers with different strengths, different subject specialisms (at secondary level) and from different schools (at primary level). We worked in one city comprehensive secondary school and four of its feeder primaries, and concentrated on mixed ability teaching for the ten to fourteen years age group.

We cannot provide here a detailed report of pupils' appraisals of their teachers' strengths. To summarise, we can state that: we have support for our assertion that pupils, as 'consumers' of teaching, have something of value to say about it; various task forms and response media were tested for eliciting pupils' views; pupils provided us with extensive 'positive' information about teachers and hardly any 'negative'; in a supplementary exercise teachers' initial scepticism was diminished and they came to see pupils' statements as 'nothing more than common sense'; and we collected evidence from a subsidiary enquiry which gave us some confidence that our categorisation of pupils' statements closely matched the teachers'.

The data consisted of pupils' written responses to the suggestion that they look back over the previous two years of school and then

> 'Please tell us about the three teachers whose teaching you thought was best. Probably there were different things you liked about each of these teachers. Please say what each teacher did in his or her teaching that you thought was good.'

The teacher characteristics on which pupils commented are exemplified below as categories of statements:

- Creation of a relaxed and enjoyable classroom atmosphere.
- Retention of control in the classroom.
- Presentation of the work in a way which interests and motivates pupils.
- Providing conditions so pupils understand the work.
- Making clear what pupils are to do or to achieve.
- Judging what can be expected of a pupil.
- Helping pupils with their difficulties.
- Encouraging pupils to raise their expectations of themselves.
- Developing personal and mature relationships with pupils, rather than treating them as small children.
- Teachers' personal talents.

By using pupils' perceptions of their teachers to select our sample (probably biased towards those with particularly good relationships with pupils) we identified 28 teachers with whom we would find it valuable to work. The final sample of sixteen included four primary teachers and twelve secondary with subject specialisms in art, computing studies, English (two), French, geography, history, outdoor education, physical education, mathematics and science (two).

THE SELECTION OF ASPECTS OF GOOD TEACHING

While pupils' views were used to select teachers, the teachers selected the aspects of their teaching to which attention would be directed. Each agreed to work with us on a 'unit of work' of their choice (between two and six hours of teaching). With the primary teachers a 'unit' was interpreted as two morning's work including language, number work, projects, reading, stories, science and television programmes. In the secondary school it meant a set of art lessons on making masks, part of a play, a section in a French course ('Circuite Touristique'), the properties of rectangles, a series of self-contained lessons in computing, a set of topics in geography, a number of periods of basketball, an outdoor education expedition to a river gorge, part of the work on a story, two sections of a resource-based science course and several lessons on the Romans.

The unit was observed by a researcher and all of the teacher's talk was recorded on audio-tape. After the lesson (or the first half of the morning) the teachers were asked to tell us about those aspects of their teaching which had particularly pleased them.

We gave each teacher the audiotapes of the lessons and two weeks later conducted a longer interview. The teacher, having listened to the tapes, could then offer further comments on what had been good about their teaching.

A variety of themes emerged from the interviews. For example, teachers highlighted:

- the ways in which they manage introductions to the lesson;
- their approaches to taking account of differences among pupils;
- the way they deal with pupils' errors;
- their attempts to build confidence and trust with pupils;
- their strategies for diffusing potential discipline problems;
- their efforts to ensure that everyone is involved and all achievements are recognised;
- their ways of managing group activities;
- how they change tack when pupils' interest or attention flags;
- the way they create a relaxed and enjoyable but, nevertheless, disciplined atmosphere in a class.

ANALYSIS OF THE DATA

Variation Among Teachers

One feature common to all the teachers was that in response to the question about their own teaching they initially referred to their pupils' activities or progress. There was considerable variation, however, both in what they identified as having pleased them and in the ways they talked about these things. Although such variation is interesting, if information from research is to be communicated and ultimately used in other contexts (such as pre-service teacher education), then it must be potentially generalisable across teachers. This implies a search for generalisations about the nature of teachers' professional craft knowledge and how they make use of it. These generalisations would relate to how teachers construe the tasks they undertake and the situations which confront them, monitor changing situations, and process information in order to make quick decisions. We could not know in advance what kinds of generalisation (if any) would be possible, however, and we had scrupulously to avoid contamination from our own preconceived notions of teaching.

'Generalisations' in this context were hypotheses to be carried on from one case to the next, rather than general laws to be applied across a population. Commonalities among the data from different cases were sought to create a theoretical framework. That framework should make sense (to teachers and others) of the teaching studied so far and be amenable to testing with new cases. It should make explicit the tacit knowledge of expert experienced teachers (who may well manage and teach their classes in such taken-for-granted ways that they are unconscious of what they have achieved).

Any generalisations that we made about how teachers evaluate their own teaching had to be judged against a number of criteria. For example, all aspects of the framework had to be directly supported by evidence (it is easy to 'add' key elements which create a coherent system but are not themselves observable in the data). Any generalisation, furthermore, had to relate to what is normal practice and not just to what a teacher does on rare occasions. Where the generalisations went beyond one individual and one occasion, they had to be based on data from each teacher and each of that teacher's lessons. It was not sufficient, however, to describe what teachers typically know or think as a series of generalisable but isolated elements; the relationships between these elements had to be identified if the framework was to reflect the rationality of the ways in which teachers perceive situations, make judgements and, in consequence, take action. And this framework should not discount any part of the teachers' accounts (it is tempting to select what suits and to label the rest as 'diverging from relevant matters'). Finally, the theoretical account of the teacher's knowledge and thinking had to be recognised and accepted by the teacher as a balanced and adequate account.

These criteria may have been too demanding for us to meet in full, but they guided our analysis, detected its weaknesses and helped us overcome those weaknesses as best we could.

As far as we know there are no established rules of procedure for this kind of analysis. We endeavoured to be systematic and self-consciously critical and generally speaking we conformed to the following pattern where two of us

(i) read intensively two transcripts of teachers' interviews,

(ii) tried out together some preconceived ideas used in interpreting the transcripts, and formulated other ideas,

(iii) read more transcripts to test the ideas against new data,

(iv) reformulated the ideas,

(v) went back to the earlier interviews to test the latest ideas,

(vi) rejected or retained ideas and formed them into a set of concepts reflecting ways in which the teachers talked,

(vii) generated questions in terms of these concepts to be asked of each interview,

(viii) went back over all the interviews to sharpen the concepts and questions,

(ix) recorded all data which did not 'fit' the conceptual framework,

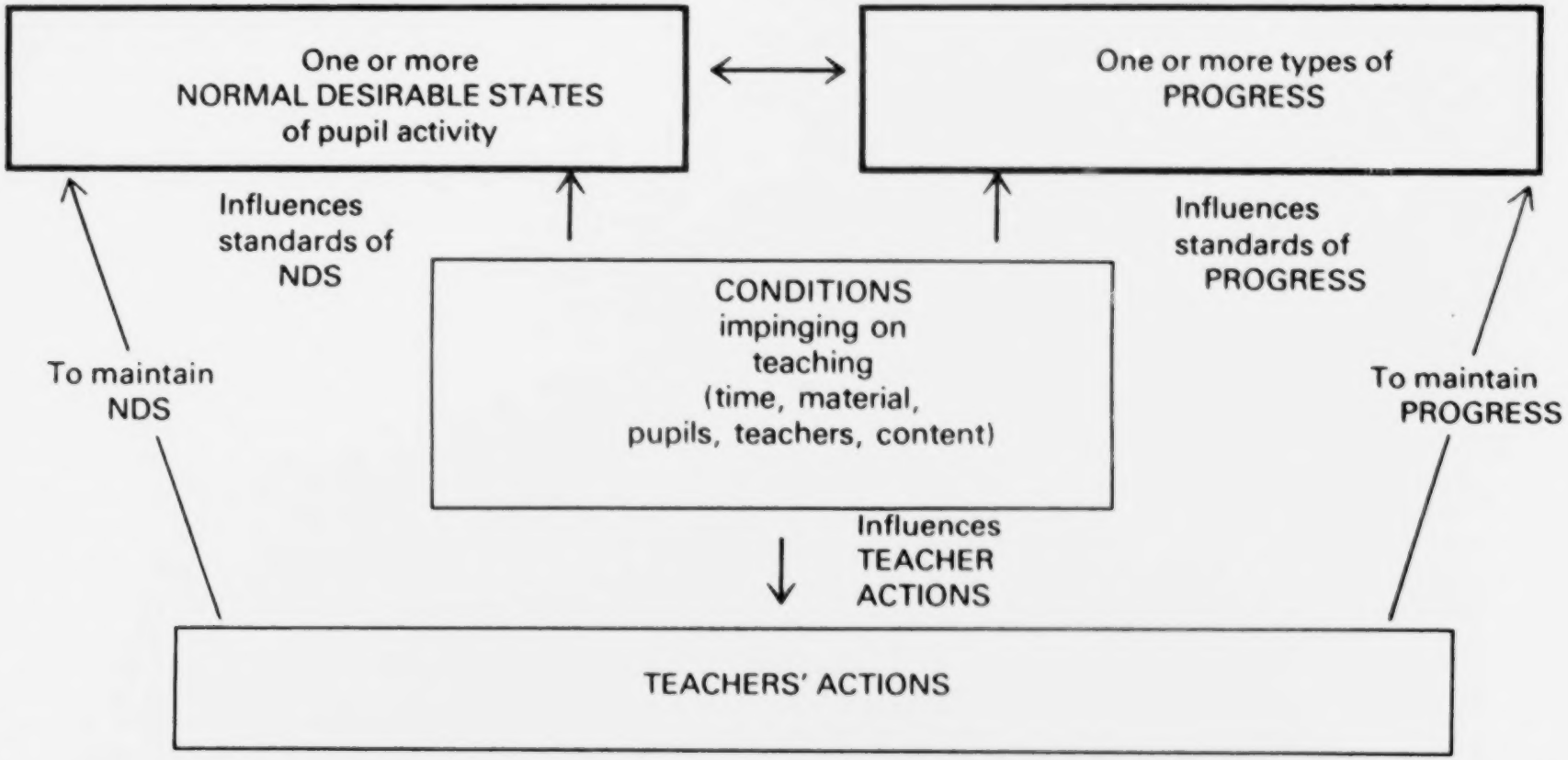
From this inductive procedure, we identified a set of generalisable and inter-connected concepts which encapsulated virtually everything the teachers had to tell us about how they evaluated their own teaching (Figure 1).

TEACHERS' CONCEPTUALISATION OF THEIR OWN CLASSROOM TEACHING

The teachers evaluated their lessons primarily in terms of maintaining particular normal desirable states of pupil activity (NDS). That is, a lesson was satisfactory so long as pupils continued to act in those ways which were seen by the teacher as routinely desirable. For one teacher, this might mean that pupils appeared to be attentive, interested, involved and volunteering answers to questions. For another, the pupils would be working independently, using the worksheets, doing everything pretty much on their own. For a third, it might be that pupils should be thinking up their own ideas but ready to seek help when necessary. These NDSs may vary according to the phase of the lesson, the particular pupils being considered and the nature of the lesson.

FIGURE 1

Teachers' Evaluations of their own Classroom Teaching: Concepts and Inter-Relationships



A second generalisable concept was that of progress. As well as evaluating their lessons in terms of maintaining particular NDSs, teachers occasionally referred to promoting specific kinds of progress. The examples of progress fell into three categories: development of pupils' attributes (eg their knowledge, understanding or confidence); progress through the work (getting through the text, the syllabus, the teacher's planned material); and the production of something (an artifact or performance). Progress goals, however, were much less frequently referred to than activity goals.

We distinguished the concepts of NDS and progress by asserting that the former involves something being maintained without change over a period of time, and the latter introduces a developmental aspect in contrast with the steady state of the former. Unambiguous categorisation, however, is not always possible. For example, where the teacher talks about 'pupils understanding' we categorise a reference to 'pupils understanding what is going on in the classroom' as NDS; if the concern was with 'pupils developing an understanding of something', this is progress; but if teachers talk about 'pupils picking things up' (in the sense of understanding) we have difficulty in deciding how this should be classified.

The 'rational curriculum planning model' suggests that the NDS activities would be planned to achieve specific kinds of progress. In a few cases this was reflected in the teachers' talk about their classroom teaching. Often, however, the classroom activity was seen as the major goal and progress as a necessary prerequisite for establishing that activity. In resource-based science courses, for example, pupils' progress through their worksheet tasks is a necessary prerequisite for maintaining their independent pattern of laboratory activity. And an NDS for computing studies which requires pupils to take instructions from the teacher, the worksheet or the computer screen, can be maintained only after pupils have made progress in the development of their skills in taking instructions from the different media.

The standards which the teachers felt they could apply to their preferred NDS or progress depended on the conditions which impinged on their teaching. These conditions related to time (including time-tabling factors), material conditions (space, equipment, weather), pupils (their behaviour or more enduring characteristics), the teacher (personal characteristics or feelings on the day) or content (of the subject, course or unit of work). So, for example, where a lesson was scheduled at the end of the afternoon rather than the start of the day, the teacher did not expect a high level of interest to be maintained among the pupils. Where the content of the lesson consisted of tasks of a very routine kind, another teacher anticipated that levels of attention would not be high. On an occasion where an individual pupil performed unexpectedly well, the teacher's plan for group work was adjusted to enable that individual to work alone.

Similarly, in relation to progress, a teacher who wanted pupils to move on from the practice of specific skills to the use of those skills within a game found he was constrained in achieving this by lack of time. In a case where some pupils worked very slowly on their assigned reading tasks, another teacher found that her aspiration that everyone would progress to the 'reading for pleasure' aspect of her lesson was unrealistic. The size of the minibus prevented third teacher from taking the whole class on an expedition; this impeded achievement of her goal of developing their understanding of the significance of Hadrian's Wall.

In the forefront of teachers' criteria for evaluating their own teaching was maintenance of NDSs and of progress (particularly the former). When they spoke about their own actions, all of these appeared to be evaluated in terms of the extent to which they were effective in maintaining particular NDSs or promoting

specific kinds of progress. No teacher evaluated any aspect of his or her teaching as inherently desirable, characteristic of good teaching, or indeed in any terms other than as instrumental towards some kind of NDS or progress.

Our analysis, therefore, produced four inter-connected generalisable concepts: NDS, progress, conditions and teachers' actions. One further relationship among these concepts is shown in Figure 1. The conditions which impinged on the teaching not only influenced the standards expected in the NDS or progress, but also led to variation in the teachers' actions. One teacher, for example, found herself short of time and had to respond to a boy, who thought he could not manage the work, by giving him the answer; under more relaxed conditions she would have provided indirect support to create in him a feeling of self-confidence in his own ability to complete the task. A second teacher normally declines to put pupils 'on the spot'; however, where she has reason to believe that a pupil is able but too shy to respond to whole-class questions, she may make a deliberate point of asking the pupil whether his or her hand is up. In another class, the content of a package of tasks had considerable variation in difficulty level; the teacher normally allows pupils a free choice from among such packages, but in this case she felt constrained to assign the more difficult tasks to the higher achievers.

Thus it seemed that all the teachers conceptualised their teaching in terms of first, maintaining some kind of normal desirable state of pupil activity in the classroom, and secondly, promoting specific sorts of progress. All of the teachers' actions were directed towards maintaining these activities and progress, although the particular activity and progress varied from teacher to teacher and occasion to occasion. A necessary additional concept, however, was that of the conditions impinging on the teaching. More specifically time, pupil characteristics, material conditions, lesson content or the teacher's own feelings could all constitute conditions which affect both the standards which teachers expect in pupils' activities or in progress and the patterns of the teachers' own actions.

It is not enough, however, for researchers to identify a set of concepts which, to their satisfaction, provide an adequate account of how teachers talk about their teaching. If the concern is with the teachers' perspective, then it is necessary that the framework of concepts has meaning for, and is acceptable to, the teachers themselves.

For our 'validation' process we constructed 'stories' about each teacher's lessons. These were based on the post lesson interviews but structured as a series of short 'chapters' each of which reflected one or more of the concepts of the framework. These 'stories' were then given to the teachers. Did they find them intelligible? Did they recognise them as their own thinking about their teaching? Had the researchers distorted what had been said to them? Did the 'stories' given an adequate account of what had been said, and had they missed anything out?

Statements like the following from all sixteen gave us cause for optimism:

- 'I recognised it as being the way I was trying to work'
- 'It's a very fair framework about how I think and go about teaching the lesson'
- 'I recognised it very easily. I think you made it more coherent, gave it a logical pattern'
- 'It didn't distort, nothing seemed out of place, nothing was twisted'

In particular, the concept of the 'conditions' which impinge on teaching was received with enthusiasm, and most provided new examples of how such conditions affected what they did in their own classrooms. Some maintained that they might have said different things about their teaching of different classes (or the same class at a different time) and others used the opportunity to provide more information about the way they thought about their teaching. We examined these new statements to see if they would indicate a need to modify our framework and found that all could be contained within our existing structure.

FURTHER TESTING OF THE FRAMEWORK AND USE OF ROUTINES

At this stage we felt we had made some progress in uncovering the concepts, and their interrelationships, which our sample of teachers used in thinking about and evaluating their teaching: that is we had taken a step towards a theory of teaching which was grounded in practice rather than in pre-determined models. From this theoretical framework we could offer also a definition of the routines which teachers develop through their teaching experience:

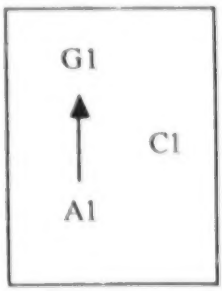
> 'A routine is a standardised pattern of action which a teacher undertakes, recognising that certain conditions are impinging on his or her teaching, in order to maintain particular desired states of pupil activity or to promote specific kinds of progress'.

However, although we had some valuable insights into what teachers valued in their own teaching and the routines which seem to work for them, we still knew very little about how these teachers did the things which they did well. We had scarcely any understanding of the mental processes underlying a teacher's recognition of a situation as having such-and-such characteristics, of a pupil as being such-and-such a kind, and of such-and-such an action on the part of the teacher being appropriate.

A further phase of our research has attempted to address these more searching questions but with only five of the secondary teachers. As yet our analysis of this work is incomplete but we report here on the preliminary findings. We concentrated on an in-depth investigation with each teacher of a limited number (not more than five) of routines which were regularly identified in that teacher's lessons. As the teachers talked in greater detail about the judgments they made, the actions they took and their reasons for taking those actions, it becore clear that their statements still conformed to the framework (Figure 1) of goals (mainly activities), conditions and actions which had emerged from the first stage of the work. We were able, however, to get a more elaborated and complex picture of their routines and the ways they combined them in their classroom teaching.

A closer examination of the nature of routines, and of the ways in which the teachers brought them into play, showed that the number of goals with which they were concerned was very much smaller than the number of actions taken. Only on relatively rare occasions was the focus on a single action directed towards a single goal (Figure 2). For example, one teacher concentrated on giving fulsome praise (action) in order that a less-able pupil could experience public encouragement in the lesson (goal).

Figure 2



A much more common pattern, however, was one in which the teacher took several different actions to obtain the same goal (Figure 3). These actions may be mutually reinforcing and so taken in parallel. For example, to achieve the goal that a reluctant pupil should be active in the work of the lesson, a teacher

- gave him something to keep him occupied while he was waiting for her to come and help him
- gave him the technical assistance he was seeking
- suggested an alternative idea when pointing out to him that one of his ideas would not work.

In this case, the major conditions which the teacher saw as impinging on her teaching were that this pupil was perceived as lazy but presented no discipline problems.

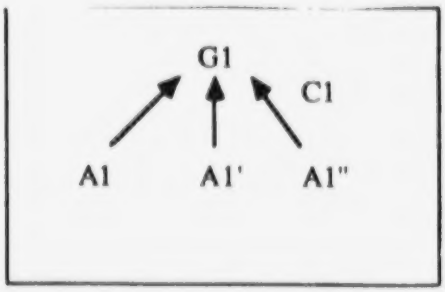


Figure 3

It was not unusual for teachers to have the same goal in several lessons. The actions taken, however, could be different if the conditions were different (Figure 4). For example, the same teacher on a different occasion again emphasised her aim of getting a reluctant pupil to work but in this case the conditions were different. Now the teacher was concerned with a pupil whom she saw as having a low level of achievement in the subject, as being frustrated by not being able to manage things he would like to do, and as creating consequent behaviour problems when the teacher's help was not immediately forthcoming. In this case the teacher included 'avoidance' actions. She

- refrained from asking him to finish off another exercise before continuing with the one he was on
- gave him the technical assistance he was seeking
- refrained from suggesting a more elaborate approach to solving his difficulty.

Thus, on different occasions the teachers bring different routines into action, but these routines have a common goal.

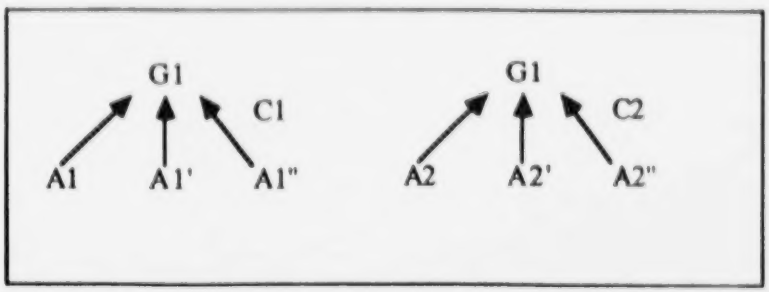


Figure 4

In addition to a pattern of parallel actions to achieve a goal, sequentially related actions were in evidence. In these cases, one action was dependent in some way on the prior taking of another (Figure 5). For some, the sequence arose because the taking of one action was dependent on the 'successful' outcome of a prior action (such as the teacher making sure that all pupils were looking at her before she started speaking). In other cases, the teacher seemed to have an implicit hierarchy of actions which were introduced systematically until the goal was achieved. For example, in his endeavour to get an undisciplined pupil to get on with his work one teacher

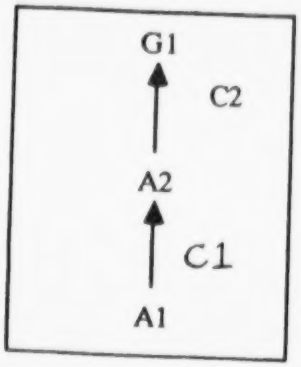


Figure 5

- gave the pupil a warning about his behaviour
- gave the pupil help when he sought the teacher's assistance subsequent to the warning
- moved the pupil to another part of the room when the behaviour did not improve.

Most frequently, however, we found a combination of parallel and sequentially related actions (Figure 6). For example, a teacher whose goal was to achieve a good work rate from pupils

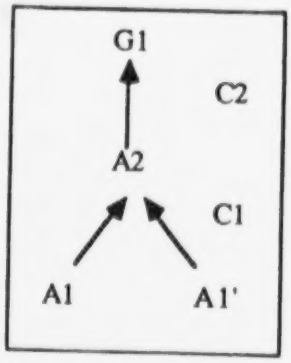


Figure 6

- went over the work of the previous week
- introduced new activities
- used his tone of voice to accentuate key points
- had a quick turnover of activities
- circulated the pupil groups to keep them at the activities
- used a pupil to help him demonstrate an action
- used a pupil to comment on the performance of a group
- praised a pupil to the class.

So far we have presented the teachers' knowledge as primarily concerned with the actions necessary to achieve one specific goal in a given set of conditions. In practice, the teachers were often concerned to attain more than one goal contemporaneously using the same set of actions (Figure 7). For example, one teacher directed his actions towards the correction of a pupil's breach of discipline while at the same time endeavouring to maintain an image of himself as approachable. He

- told the pupil to return to her seat
- told her again, this time in a mock 'aghast' tone
- made an exaggerated comment about the mayhem of the class in general, while mopping his brow elaborately.

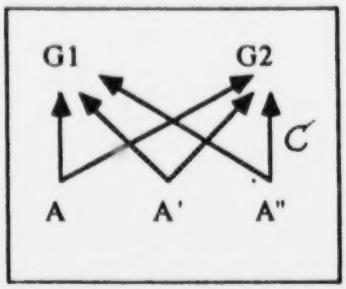


Figure 7

The frequency of contemporaneous goals is considerably increased if the definition of 'goal' encompasses the avoidance of undesirable states or events. For example, one teacher was concerned that all the pupils should have sufficient time to understand the work of the lesson, but at the same time it was essential to avoid boring the more able pupils.

It is not necessarily the case, of course, that the two goals are likely to be achieved by one set of actions. In some cases, the teacher may adopt separate sets of action to achieve each goal and these actions may be mutually compatible (Figure 8). So, for example, one teacher's main goal was that the pupils should attend to the lesson content throughout. To this end he

- told the class what they had to do
- told them to work quietly
- conceded to a pupil request to play a tape
- laid out work of his own on a group desk so that the talkative members of the group had to sit at individual desks.

At the same time, however, he was anxious to improve relations with a pupil who had been in trouble on the previous day. To achieve this he

- offered her help with her work
- passed a lighthearted conversation with her.

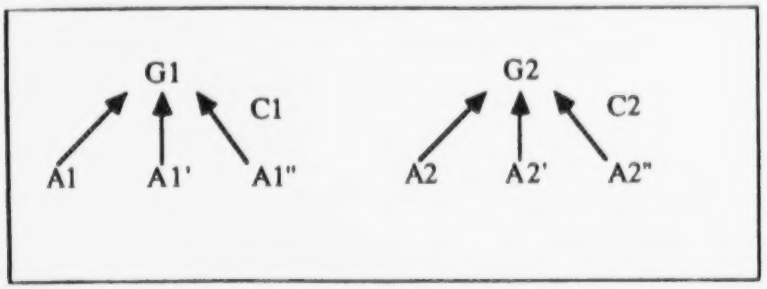


Figure 8

In the cases above, the achievement of one of the goals does not have to be at the expense of the other. In other instances the actions to achieve the different goals may be incompatible and choices have to be made(Figure 9).
It seems that teachers then adopt the routine directed towards the more highly valued goal. (If they have the option, they will choose actions which least endanger their other goals). For example, one teacher was particularly concerned that an individual pupil should have the confidence to seek the teacher's help when she needed it. However, a further aim was that the pupil should not copy ideas. In achieving her first goal, the teacher encouraged, helped and responded positively to requests and suggestions from the pupil. Because the main suggestion put forward by the pupil involved copying something, the teacher decided to abandon the pursuit of her second goal in favour of the first.

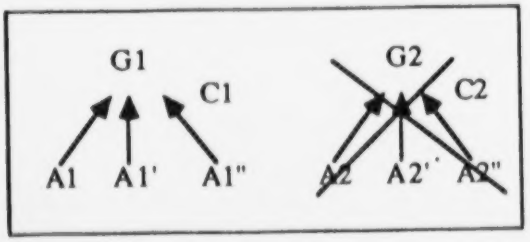


Figure 9

An examination across teachers, and across lessons taught by each teacher, showed repeated evidence of a major concern in their goals to establish and maintain a pattern of classroom activity characterised by

- a good and easy relationship between the teacher and pupils in the classroom.

- pupils understanding what the teacher is asking them to do

- pupils who (for whatever reason) are reluctant to work, are actually working

- all pupils are applying themselves well to the work

- pupils are thinking about, and understanding, what they are doing, rather than just doing what they are told.

Individual teachers also had distinctive priorities for the normal desirable states of activity in their classrooms. An art teacher, for example, laid great emphasis on pupils continually making use of their imaginations, and on effective organisation of the diverse classroom activities of different individual pupils. In contrast, a computing studies teacher stressed the importance of keeping pupils working well together as a group, and of the activities following a structured sequence through the lesson. To what extent these reflect subject differences rather than differences between individual teachers we cannot say. Our sample is clearly too small to make such a distinction.

The more detailed exploration of the basis on which teachers choose to take particular actions to achieve their activity goals, confirmed the importance they attach to the various categories of conditions impinging on their teaching. The most salient conditions related to pupils. In some cases, teachers were basing their judgments on their perceptions of individual pupils' generalisable limitations: short attention span, unlikely to understand, cannot be relied upon to remember. In other cases, behavioural indicators such as signs of pupils not understanding, not having heard, not having remembered or misbehaving were the cues which teachers acted upon.

There was, however, another factor which bore upon the judgments teachers made about how they should act, and our earlier framework did not take this into account. This factor arises from the multiple goals which teachers always have in mind. For example, in explaining how they came to take a set of actions they would remind us that they always aim to be seen by pupils to be acting 'fairly', or to behave in a way that takes into account relationships between pupils, or to avoid the appearance of having lost control of the situation. We have already suggested that sometimes teachers have goals which are incompatible and so one or more has to be abandoned. Very frequently teachers are faced with goals which apparently are in conflict and this has to be resolved in some way. They often talked about the balance which must be kept between, for example,

- encouraging the shy pupils and dampening down the boisterous

- giving the slow workers time to finish and avoiding the fast workers becoming bored

- stretching the high achievers and preventing the low achievers becoming demoralised

- maintaining a friendly classroom atmosphere but sustaining the authority of the teacher.

One area in which we have been disappointed in our findings is the attempt we made to get teachers to tell us something of their mental processes as they make their judgments about classroom situations and pupils. Despite that failure, however, we believe we now have a much sounder understanding of how teachers' craft knowledge and classroom actions are interwoven.

Another strand of the research is attempting to build on our methods rather than the substantive findings. As researchers, we have been able to elicit a body of rich and useful information from teachers; now we are to explore ways in which we can help student teachers to use the same approach and so enhance their learning from experienced teachers. But that must be reported another time.

In conclusion, we point to three other potential benefits which will accrue from the development of an understanding of teachers' professional craft knowledge. First, an appreciation of what teachers already do well would allow a 'building on strengths' approach to the sharing of expertise in in-service teacher education; that would complement the traditional 'deficit' model where we identify what teachers ought to be doing (but are not) and then try to plug the gaps. Secondly, if curriculum innovations could take specific account of what already works well in classrooms, they would have a much greater chance of acceptance by teachers and of effective implementation. And thirdly, if the appraisal of teachers is to be introduced, then it is surely necessary that they have some say in the criteria against which their teaching is assessed. If that is the case, then we need to know how teachers conceptualise and evaluate their own teaching.

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